

THE PENDING CLAIMS

The claims pending in the Application are reproduced below for the Examiner's convenience:

Claim 1 (Previously Presented): A fuel for motor vehicles comprising an emulsion between water and a liquid hydrocarbon, and 30 ppm to 3 % by weight per total weight of the emulsion of an anti-cavitation additive, said anti-cavitation additive comprising a copolymer prepared by copolymerizing 20-80% in moles of an ethylenically unsaturated carboxylic acid monomer containing at least one carboxylic acid group and 80-20% in moles of at least one other ethylenically unsaturated monomer,

wherein (1) at least 20% in moles of the carboxylic acid groups in the copolymer is in the form of at least one derivative selected from the group consisting of carboxylate salt, ester, amide and imide derivatives of the carboxylic acid groups, and (2) the copolymer has an average molecular weight M_w ranging from 700 to 3000; and

wherein the quantity of water in the emulsion ranges from 2 to 40% by weight.

Claim 2 (Canceled).

Claim 3 (Previously Presented): The fuel for motor vehicles according to claim 1, wherein the carboxylic acid groups present in the copolymer are partially or totally salified by means of a neutralization reaction carried out with an inorganic or organic base.

Claim 4 (Previously Presented): The fuel for motor vehicles according to claim 3, wherein the base is selected from the group consisting of hydroxides of alkaline or alkaline earth metals, ammonium hydroxide or quaternary ammonium hydroxides, sodium and/or potassium carbonates and bicarbonates, and C_1 - C_{30} aliphatic alkyl amines.

Claim 5 (Previously Presented): The fuel for motor vehicles according to claim 1, wherein the carboxylic acid groups present in the copolymer are partially or totally esterified by means of an alcohol or a polyol with a low number of carbon atoms.

Claim 6 (Previously Presented): The fuel for motor vehicles according to claim 1, wherein the carboxylic acid groups present in the copolymer are partially or totally transformed into amide or imide groups by means of thermal treatment in the presence of a primary or secondary aliphatic amine with a low number of carbon atoms.

Claim 7 (Previously Presented): The fuel for motor vehicles according to claim 1, wherein the ethylenically unsaturated carboxylic acid monomer is a C₃-C₁₀ aliphatic monocarboxylic acid having an ethylene unsaturation, or a C₄-C₁₀ aliphatic dicarboxylic acid having an ethylene unsaturation.

Claim 8 (Previously Presented): The fuel for motor vehicles according to claim 1, wherein the at least one ethylenically unsaturated monomer is selected from the group consisting of C₂-C₁₂ α -olefins, C₁-C₆ alkyl esters of (meth)acrylic acid, vinyl ethers and vinyl esters.

Claim 9 (Previously Presented): The fuel for motor vehicles according to claim 1, wherein the liquid hydrocarbon has a viscosity at 40°C ranging from 1 to 5.3 cSt and a density at 15°C ranging from 0.75 to 1.1 kg/dm³.

Claim 10 (Previously Presented): The fuel for motor vehicles according to claim 1, wherein the water is present in a quantity ranging from 3 to 20% by weight per total weight of the emulsion.

Claim 11 (Previously Presented): The fuel for motor vehicles according to claim 1, wherein the emulsion is of the water-in-oil type.

Claim 12 (Previously Presented): The fuel for motor vehicles according to claim 11, wherein the emulsion comprises at least one emulsifying agent whose concentration ranges from 0.1 to 10% by weight per total weight of the emulsion.

Claim 13 (Previously Presented): The fuel for motor vehicles according to claim 12, wherein said at least one emulsifying agent has an HLB (Hydrophilic-Lipophilic Balance) value ranging from 2 to 10.

Claim 14 (Original): The fuel for motor vehicles according to claim 13, wherein said at least one emulsifying agent has an HLB (Hydrophilic-Lipophilic Balance) value ranging from 3 to 8.

Claim 15 (Previously Presented): The fuel for motor vehicles according to claim 12, wherein said at least one emulsifying agent is a product obtained by the reaction of: (a1) a polyolefinic oligomer functionalized with at least one group deriving from a dicarboxylic acid, or one of its derivatives; with (a2) a polyoxy-alkylene comprising linear oxy-alkylene units, said polyoxy-alkylene being bound to a long-chain alkyl group optionally containing at least one ethylene unsaturation.

Claim 16 (Previously Presented): The fuel for motor vehicles according to claim 12, wherein said at least one emulsifying agent is a product obtained by the reaction of (b1) a carboxylic acylating agent containing a hydrocarbon chain having from 50 to 500 carbon atoms, with (b2) ammonia or an amine.

Claim 17 (Previously Presented): A process for feeding an internal combustion engine which comprises: feeding a fuel to a combustion chamber of said engine; and igniting said fuel in said combustion chamber, wherein said fuel comprises an emulsion between water and a liquid hydrocarbon, and an anti-cavitation additive according to claim 1.

Claim 18 (Original): The process according to claim 17, wherein the internal combustion engine is a diesel cycle engine.

Claim 19 (Previously Presented): The fuel for motor vehicles according to claim 1, comprising 50 ppm to 1.5 % by weight per total weight of the emulsion of the anti-cavitation additive.

Claim 20 (Previously Presented): The fuel for motor vehicles according to claim 1, wherein the water is present in a quantity ranging from 4 to 10% by weight per total weight of the emulsion.

Claim 21 (Previously Presented): The fuel for motor vehicles according to claim 1, wherein 30-90% in moles of the carboxylic acid groups in the copolymer are in the form of at least one derivative selected from the group consisting of carboxylate salt, ester, amide and imide derivatives of the carboxylic acid groups.

Claim 22 (Previously Presented): The fuel for motor vehicles according to claim 1, further comprising 0.5 to 8% by weight, with respect to the total weight of the fuel, of an anti-freeze additive.

Claim 23 (Previously Presented): The fuel for motor vehicles according to claim 1, wherein the water in the emulsion is demineralized or deionized water.

Claim 24 (Previously Presented): A fuel for motor vehicles comprising an emulsion between water and a liquid hydrocarbon, and 30 ppm to 3 % by weight per total weight of the emulsion of an anti-cavitation additive, said anti-cavitation additive comprising a copolymer prepared by copolymerizing 20-80% in moles of an ethylenically unsaturated carboxylic acid monomer containing at least one carboxylic acid group and 80-20% in moles of at least one other ethylenically unsaturated monomer,

wherein (1) 30 to 90% in moles of the carboxylic acid groups in the copolymer are in the form of at least one derivative selected from the group consisting of carboxylate salt, ester, amide and imide derivatives of the carboxylic acid groups, and (2) the copolymer has an average molecular weight M_w ranging from 700 to 3000; and

wherein the quantity of water in the emulsion ranges from 2 to 40% by weight and the water in the emulsion is demineralized or deionized water; and

wherein an antifreeze is added to the fuel in a quantity ranging from 0.5 to 8% by weight, with respect to the total weight of the fuel.